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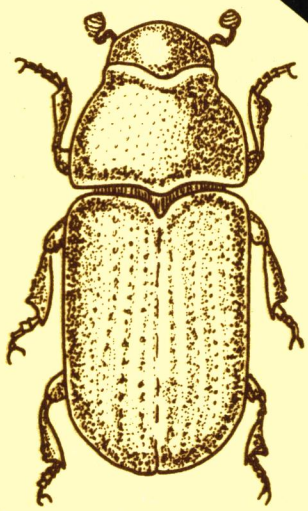
BIOLOGICAL EVALUATION
Western Tent Caterpilar

Navajo Mountain
Navajo Indian Reservation
Arizona

1976



Southwestern Region

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Western Tent Caterpillar

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Navajo Indian Reservation
Arizona

March 1976

Forest Insect and Disease Management
State and Private Forestry
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INTRODUCTION

The western tent caterpillar population on Navajo Mountain, Navajo Indian Reservation, was evaluated on September 25, 1975, by Donald D. Lucht, entomologist, and Jack Kyselka, Assistant Area Forester, Bureau of Indian Affairs, Window Rock, Arizona. Defoliation in September of 1975 was scattered, ranging from light to moderate throughout the 3,000 acres of aspen. Based on the egg masses collected from throughout the aspen stand, the predicted defoliation trend and resulting defoliation are expected to be moderate to heavy during the spring and early summer of 1976.

GENERAL INFORMATION

Location.--South slope of Navajo Mountain, along the service road leading to the mountain crest. Navajo Mountain is located about 80 miles northwest of Kayenta, Arizona, on the Arizona-Utah State line.

Insect.--Awestern tent caterpillar, Malacosoma californicum (Packard)

Host.--Quaking aspen, Populus tremuloides Michx.

Type of Damage.--Spotty defoliation, ranging from light to moderate throughout the stand.

History of Infestation.--This area suffered moderate to heavy defoliation in 1964. The area was aerially treated in June 1965 with carbaryl (Sevin sprayable - 80% wettable powder) in fuel oil at the rate of 1 pound active ingredient per acre.

The current infestation was reported for the first time in early August 1975.

BIOLOGICAL INFORMATION

Sampling Method.--Twenty host trees over 3 inches d.b.h. were selected and sampled at random. Two 30-inch branch samples were pruned from the upper crown of each tree. All new egg masses on the two 30-inch branch samples were counted and recorded, and an average determined for the 20 trees. This average value is then used to predict the defoliation category for the spring of 1976. Predicted defoliation is based on the following averages:

Average number of new egg masses per two 30-inch branches[1/]	Predicted defoliation
0.7 or less	Light
1.2 to 1.7	Moderate
2.5 or more	Heavy

1/ Based on 20 trees.

Each egg mass recorded on a branch sample represents about 8.6 egg masses on the entire tree.

Results.--A total of 91 new egg masses were recorded from the 40 branch samples taken from the 20 sample trees. This is an average of 4.55 new egg masses per two 30-inch branches. Based on the above prediction scale, heavy defoliation is expected in 1976.

DISCUSSION AND RECOMMENDATIONS

The 3,000 acres of aspen on Navajo Mountain received scattered defoliation in 1975, ranging from light to moderate throughout the stand. No branch-kill was observed in 1975 and none is expected in 1976. Total tree mortality would not be expected until after 3 to 4 years of successive heavy defoliation has occurred.

We recommend that:

1. No chemical suppression action be taken in 1976.

2. An aerial survey be made over the area in July 1976, and the defoliation categories mapped.

3. A biological evaluation be made in September 1976, and comparison made between 1975 and 1976 egg mass counts. If the defoliation trend continues upward, a suppression action be considered for 1977.